# ABSTRACT

Down syndrome, also known as trisomy 21, is a condition characterized by the presence of an extra 21st chromosome. This disorder can lead to delays in physical and mental development, and even disabilities. In Indonesia, there is a community that fosters relationships among individuals with Down syndrome called the Association of Parents of Children with Down Syndrome (POTADS). According to a scientific journal titled "Down Syndrome" published in 2020, children with Down syndrome experience delays in neurodevelopment, including intellectual disability, developmental delay, and language disorders [32].

To alleviate parents concerns about their children with Down syndrome potentially going missing, this Capstone Design introduces an innovative GPS tracker integrated with a mobile application using the MQTT data communication protocol. MQTT (Message Queuing Telemetry Transport) enables efficient data communication between the GPS tracker and the mobile application, ensuring real-time and accurate location data transmission. This allows parents of children with Down syndrome to monitor their children's whereabouts without worry, enabling the children to explore their surroundings safely.

Keyword : Down Syndrome, GPS tracker, Mobile Application, MQTT, Cloud Computing